

MAX HERBOLD INC. (PWS 5160013)
SOURCE WATER ASSESSMENT FINAL REPORT

September 27, 2002



State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for Max Herbold Inc., Burley, Idaho* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Max Herbold Inc. drinking water system (PWS 5160013) consists of one well. The system serves approximately 50 people through one connection. The well is located to the west of the city of Burley approximately 2.5 miles (Figure 1).

Final susceptibility scores are derived from equally weighting system construction scores, hydrologic sensitivity scores, and potential contaminant/land use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other categories results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential contaminants are divided into four categories, inorganic contaminants (IOCs, e.g. nitrates, arsenic), volatile organic contaminants (VOCs, e.g. petroleum products), synthetic organic contaminants (SOCs, e.g. pesticides), and microbial contaminants (e.g. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

Overall, the well's susceptibility ratings are high for IOCs, moderate for VOCs, and automatically high for SOCs and microbial contaminants. The automatic ratings result from a detection of the SOC atrazine (December, 1998) and repeat detections of total coliform bacteria (December 1998) in the well. Hydrologic sensitivity and system construction scores rated moderate, and land use scores rated high for IOCs, VOCs, SOCs, and moderate for microbials (Table 2).

The only IOCs detected in the sampled water have been barium, fluoride, chromium, arsenic, and nitrate. Barium, fluoride, and chromium been detected in quantities significantly below their maximum contaminant levels (MCLs), as set by the Environmental Protection Agency (EPA). Arsenic has been detected as high as 5 parts per billion (ppb) (December, 2000), half its MCL of 10 ppb. Nitrate quantities have been consistently detected between 7 and 8 parts per million (ppm), just below its MCL of 10 ppm. The SOC atrazine has been detected in the well at 0.09 ppb (MCL = 3 ppb), but any detection is significant and results in an automatic high overall SOC rating because it exhibits that a pathway for contamination already exists. Total coliform has been detected in the well, and total coliform and E.coli have been detected many times in the distribution system. Total trihalomethanes, chlorination byproducts (VOCs), have been detected in concentrations of 13.2 ppm, significantly below its MCL of 100 ppm. Water cannot be totally free of byproducts when disinfection is used.

County level nitrogen fertilizer use, county level herbicide use, and total county level agricultural chemical use are rated as high for the area. In addition, the delineation falls within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Max Herbold Inc., drinking water protection activities should first focus on correcting any deficiencies outlined in the 1993 Sanitary Survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system’s components and its capacity). No chemicals should be stored or applied within the 50-foot radius of the wellhead. Practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water area should be implemented. Most of the designated areas are outside the direct jurisdiction of Max Herbold Inc. Partnerships with state and local agencies and industry groups should be established and are critical to success.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations are near urban and residential land uses areas. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. There are transportation corridors near the delineations, therefore the Department of Transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A system with a fully developed drinking water protection program will incorporate many strategies, be they regulatory in nature (e.g. zoning, permitting) or non-regulatory in nature (e.g. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Twin Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR MAX HERBOLD INC., BURLEY, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings, used to develop this assessment, is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The DEQ recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Max Herbold Inc. drinking water system (PWS 5160013) consists of one well. The system serves approximately 50 people through one connection. The well is located to the west of the city of Burley approximately 2.5 miles (figure 1).

The main IOC water chemistry issues recorded in the public water system are nitrate, which has been measured consistently about 75% of its MCL, and arsenic, which has been detected at 50% of its MCL. The SOC atrazine has been detected in low concentrations, however, any detection is significant as it exhibits that a pathway for further contamination already exists. Total coliform has been detected in the well, but not since October 1999. Total coliform and E.coli have been detected multiple times in the distribution system. Disinfection byproducts have been detected in the system at low concentrations.

County level nitrogen fertilizer use, county level herbicide use, and total county level agricultural chemical use are rated as high for the area. In addition, the delineation falls within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Defining the Zones of Contribution – Delineation

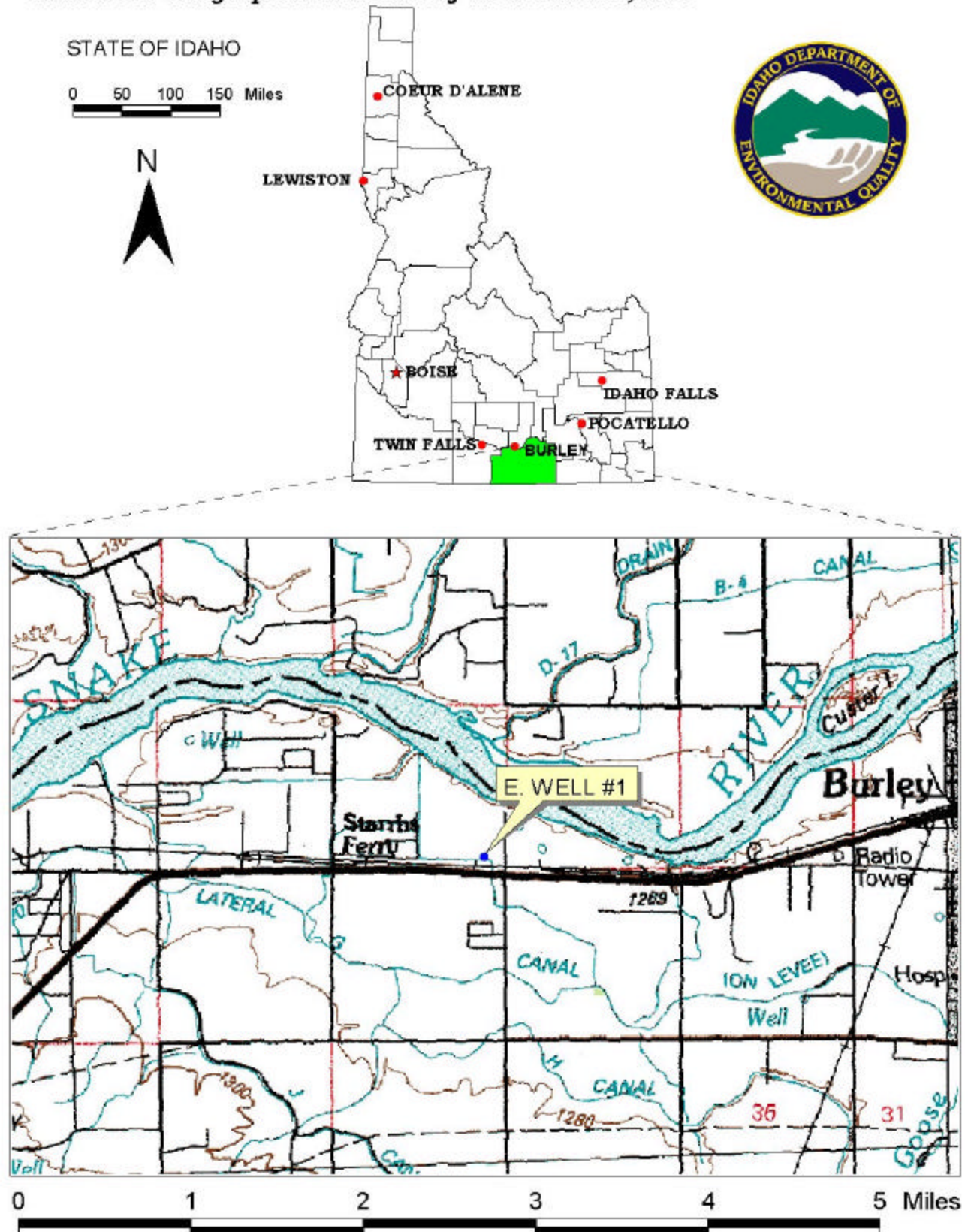
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the time-of-travel (TOT) zones for water associated with the Goose Creek – Golden Valley aquifer south of the Snake River in the vicinity of the Max Herbold Inc.. The computer model used site-specific data, assimilated by DEQ from a variety of sources including local area well logs and hydrogeologic reports summarized below.

The wells extract water from basalt of the Snake River Group to the northeast and east and possibly the Idavada Volcanics to the south of the facility. The Snake River Group consists of basalt flows with thicknesses ranging from a few to several tens of feet. Contacts between the flows and in rubbly zones are the best water producers. The basalt overlies the Idavada Volcanics.

The Idavada Volcanics unit, locally referred to as rhyolite, consists of welded ash and tuff, rhyolite, and some basalt flows. The flows are dense and are commonly reddish-brown, gray, or black. The tuff and ash beds are fine to coarse grained, light colored, and commonly water laden (Crosthwaite, 1969).

Twenty-four years of records since 1964 set the average yearly rainfall in Burley at 8.6 inches (Crosthwaite, 1969). The Albion Range and the fault zone at its base bound the plain on the southeast and the Rock Creek Hills bound the plain on the southwest. The lowland slopes northward from an altitude of about 4,600 feet at Oakley to 4,150 feet at Burley (Crosthwaite, 1969).

FIGURE 1. Geographic Location of Max Herbold, Inc.



The regional Snake River Group basalts to the east and northeast mainly influenced the Max Herbold Inc. delineation modeling. However, there was also a southerly component of the flow from the fault zone along the Albion Range. Previous modeling (Garabedian, 1992) in the area was used as a guide.

The delineated source water assessment area for the Max Herbold Inc. wells can best be described as a pie slice originating from the wellhead and extending east of the well 6 miles and widening to 5 miles (Figure 2). The data used by DEQ in determining the source water assessment delineation area is available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and Max Herbold Inc. and from available databases.

The dominant land use outside the Max Herbold Inc. area is urban and irrigated agriculture. Land use within the immediate area of the wellheads consists of a waste land application (WLAP) site. Highway 27, 30, and 81, and the Union Pacific Railroad are major transportation corridors in the area. The Snake River also transects the area.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted in April and May of 2002. This involved identifying and documenting potential contaminant sources within the Max Herbold Inc. Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ.

The delineation (Appendix A - Table 1, Figure 2) has 321 potential point sources. These potential contaminant sources include leaking underground storage tank (LUST) sites, underground storage tank (UST) sites, Toxic Release Inventory (TRI) sites, commercial, industrial, and municipal businesses, sand and gravel pits, dairies, canals, and Group 1 sites. Additionally, there are sites regulated by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the Resource

Conservation Recovery Act (RCRA), the Superfund Amendments and Reauthorization Act (SARA), and the National Pollutant Discharge Elimination System (NPDES).

Highways 27, 30, and 81, the Eastern Idaho Railroad, and the Snake River are major sources that cross the delineations. If an accidental spill occurred in any of these sources, IOCs, VOCs, SOCs, or microbial contaminants could be added to the aquifer system.

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Appendix B contains the susceptibility analysis worksheet for the system. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquicard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

The hydrologic sensitivity was moderate for the well. This reflects the poorly drained nature of area soils, a vadose zone composed predominantly of sand, gravel, and fractured basalt, and the absence of an aquicard above the producing zone of the well. In addition, the water table is less than 300 feet deep.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The Max Herbold well rated moderate susceptibility for system construction. The 16-inch well is 330 feet deep and seated into broken gray basalt. It is sealed to a depth of 70 feet into a sand/gravel/clay unit with grout. Two screened intervals exist below the 212 feet deep water table between 214 feet and 254 feet, and 313 feet and 325 feet. Information derived from the 1993 Sanitary Survey and the well log found that the well is located outside of the 100-year floodplain, the wellhead and surface seal are maintained, and the well is protected from surface flooding. The score was increased because the bottom of the casing is not seated into a low permeability unit, the highest production comes from less than 100 feet below the water table, and the casing thickness does not meet current standards.

Though the Max Herbold Inc. Well may have met construction standards at the time of its installation, current well construction standards are stricter. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all Public Water Systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the requirements include casing thickness, well tests, and depth and formation type that the surface seal must be installed into. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Sixteen-inch and Twenty-inch diameter casings on wells require casing thicknesses of at least 0.375-inches. Well tests are required at the design pumping rate for 24 hours or until stabilized drawdown has continued for at least six hours when pumping at 1.5 times the design pumping rate. The well received an additional point in the system construction category because it does not meet current well construction standards, although they may have at the time of construction.

Potential Contaminant Source and Land Use

The wells rated high for IOCs (e.g. arsenic, nitrate), VOCs (e.g. petroleum products), SOC (e.g. pesticides), and moderate for microbial contaminants (e.g. bacteria) (Table 2). The large number of urban potential contaminant sites, as well as the local transportation corridors and the irrigated agricultural land contributed the largest numbers of points to the contaminant inventory rating. County level nitrogen fertilizer use, county level herbicide use, and total county level ag-chemical use are rated as high for the well. In addition, the delineation falls within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, storage of chemicals within 50 feet of the wellhead, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area, because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and much agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, the well rates moderate for all contaminant types.

Table 2. Summary of the Max Herbold Inc. Susceptibility Evaluation

| Table 2: Summary of the Final Hazardous Site Susceptibility Evaluation | | | | | | | | | | |
|--|------------------------------------|-----------------------|-----|-----|------------|---------------------|------------------------------|-----|-----|------------|
| Source | Susceptibility Scores ¹ | | | | | | | | | |
| | Hydrologic Sensitivity | Contaminant Inventory | | | | System Construction | Final Susceptibility Ranking | | | |
| | | IOC | VOC | SOC | Microbials | | IOC | VOC | SOC | Microbials |
| Well | M | H | H | H | M | M | H | M | H* | H* |

¹H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H* = automatic high rating for atrazine (IOC) detection and repeat detections of total coliform (December, 1998) in the well.

Susceptibility Summary

In terms of total susceptibility ratings are high for IOCs, moderate for VOCs, and automatically high for SOC and microbial contaminants. The automatic ratings result from a detection of the SOC atrazine (December, 1998) and repeat detections of total coliform bacteria (December 1998) in the well. Hydrologic sensitivity and system construction scores rated moderate, and land use scores rated high for IOCs, VOCs, SOC, and moderate for microbials.

The main IOC water chemistry issues recorded in the public water system are nitrate, which has been measured consistently about 75% of its MCL, and arsenic, which has been detected at 50% of its MCL. The SOC atrazine has been detected in low concentrations, however, any detection is significant as it exhibits that a pathway for further contamination already exists. Total coliform has been detected in the well, but not since October 1999. Total coliform and E.coli have been detected multiple times in the distribution system. Disinfection byproducts have been detected in the system at low concentrations.

County level nitrogen fertilizer use, county level herbicide use, and total county level agricultural chemical use are rated as high for the area. In addition, the delineation falls within a nitrate priority area and an SOC priority area for the pesticide Atrazine.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local drinking water protection area. For the Max Herbold Inc., drinking water protection activities should first focus on correcting any deficiencies outlined in the 1993 sanitary survey. No chemicals should be stored or applied within the 50-foot radius of the wellhead. There are numerous potential contaminant sources within the delineated area, Max Herbold Inc. should focus on managing hazardous material on-site in a proper manner. Other practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water area should be implemented. Most of the designated areas are outside the direct jurisdiction of the Max Herbold Inc.. Partnerships with state and local agencies and industry groups should be established and are critical to success.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations are near urban and residential land uses areas. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. There are transportation corridors near the delineations, therefore the Department of Transportation should be involved in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A system with a fully developed drinking water protection program will incorporate many strategies, be they regulatory in nature (e.g. zoning, permitting) or non-regulatory in nature (e.g. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Twin Falls Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Twin Falls Regional DEQ Office (208) 736-2190

State DEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us>

Water suppliers serving fewer than 10,000 persons may contact Ms. Melinda Harper, Idaho Rural Water Association, at 208-343-7001 (mlharper@idahoruralwater.com) for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund, is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

Crosthwaite, E.G., 1969. *Water Resources in the Goose Creek-Rock Creek Basins, Idaho, Nevada and Utah*, prepared by the U.S. Geological Survey in cooperation with Idaho Department of Reclamation, Water Information Bulletin No. 8.

deSonneville, J.L.J., 1972, *Development of a Mathematical Groundwater Model*, Water Resources Research Institute, University of Idaho, Moscow, Idaho, 227 p.

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Appendix A

Potential Contaminant Table

Table 1. Max Herbold Inc., Wells #1, #2, & #3, Potential Contaminant Inventory

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|------------------|---|-----------------------|-----------------------|-------------------------------------|
| 1, 2 | Site Cleanup Completed , Impact: Unknown; Gas Station, open, LUST site, UST site | 3 YR | Database Search | IOC, VOC, SOC |
| 3 | Welding | 3 YR | Database Search | IOC, VOC, SOC |
| 4, 19 | Oils-Fuel (Wholesale), SARA site | 3 YR | Database Search | IOC, VOC, SOC |
| 5, 6, 7 | Buildings-Metal; roofing contractors | 3 YR | Database Search | IOC, VOC, SOC |
| 8 | Machine Shops | 3 YR | Database Search | IOC, VOC, SOC |
| 9 | Industrial discharge, NPDES site | 3 YR | Database Search | IOC, SOC, Microbials |
| 10, 11 | Industrial discharge, NPDES site | 3 YR | Database Search | IOC, SOC, Microbials |
| 12 | TRI site | 3 YR | Database Search | IOC, VOC, SOC |
| 13 | Sand & Gra ,Haznumber = 0, mine | 3 YR | Database Search | IOC, VOC, SOC |
| 14 | Sand & Gra ,Haznumber = 0, mine | 3 YR | Database Search | IOC, VOC, SOC |
| 15 | Sand & Gra ,Haznumber = 0, mine | 3 YR | Database Search | IOC, VOC, SOC |
| 16 | Sand & Gra ,Haznumber = 0, mine | 3 YR | Database Search | IOC, VOC, SOC |
| 17 | Refrigerated Warehousing & Storage, SARA | 3 YR | Database Search | IOC, VOC, SOC |
| 18 | SARA site | 3 YR | Database Search | IOC, VOC, SOC |
| 20 | HWY & ST Const., SARA | 3 YR | Database Search | IOC, VOC, SOC |
| 21 | group1 | 3 YR | Database Search | IOC, VOC, SOC |
| 22 | PWS, LA, & Private well within 1 mile all >10 nitrate, group1 | 3 YR | Database Search | IOC |
| 23 | Potato Processing, WLAP site | 3 YR | Database Search | IOC, SOC, Microbials |
| 24, 59 | Gas Station; Open; Site Cleanup Completed, impact:unk, UST site, LUST site | 6 YR | Database Search | IOC, VOC, SOC |
| 25, 82 | Site Cleanup Incomplete , Impact: GROUND WATER, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 26, 111 | Site Cleanup Completed , Impact: Unknown, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 27 | Site Cleanup Completed , Impact: Unknown, LUST site | 6 YR | Database Search | VOC, SOC |
| 28, 48 | Site Cleanup Completed , Impact: Unknown, UST site, LUST site | 6 YR | Database Search | VOC, SOC |
| 29 | Site Cleanup Completed , Impact: Unknown, LUST site | 6 YR | Database Search | VOC, SOC |
| 30, 50 | Gas Station; Closed, Site Cleanup Completed, impact: unk, UST site, LUST site | 6 YR | Database Search | VOC, SOC |
| 31, 52 | Gas station, closed;Site Cleanup Completed , Impact: Ground Water, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 32, 57 | Site Cleanup Completed , Impact: Unknown, UST site, LUST site | 6 YR | Database Search | VOC, SOC |
| 33 | Site Cleanup Completed , Impact: Unknown, LUST site | 6 YR | Database Search | VOC, SOC |
| 34, 67 | Site Cleanup Completed , Impact: Unknown; Farm, closed, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 35, 69 | Site Cleanup Completed , Impact: Unknown, UST site, LUST site | 6 YR | Database Search | IOC, VOC, SOC |
| 36, 71, 186, 285 | Truck-Repairing & Service, Site Cleanup Completed, impact:unk, rcra site, LUST site, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 37, 80 | Gas Station; Open, site cleanup completed, impact:unk, UST site, LUST | 6 YR | Database Search | IOC, VOC, SOC |
| 38, 88 | Site Cleanup Completed , Impact: Unknown, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 39, 96 | Site Cleanup Completed , Impact: Unknown, Gas Station, closed, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 40 | UST site, Site Cleanup Completed , Impact: Unknown, LUST site | 6 YR | Database Search | IOC, VOC, SOC |
| 41, 113 | Gas Station; Closed, Site Cleanup Completed, impact: unk, UST site, LUST site | 6 YR | Database Search | VOC, SOC |
| 42, 117 | Site Cleanup Completed , Impact: Unknown; Gas Station, closed, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 43 | Site Cleanup Completed , Impact: Unknown, LUST site | 6 YR | Database Search | VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|--------------|--|-----------------------|-----------------------|-------------------------------------|
| 44, 68 | Site Cleanup Incomplete , Impact: Unknown, LUST site, UST site | 6 YR | Database Search | VOC, SOC |
| 45 | UST site, Gas Station; Open | 6 YR | Database Search | IOC, VOC, SOC |
| 46 | Commercial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 47 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 49 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 51 | UST site, Not Listed; Closed | 6 YR | Database Search | VOC, SOC |
| 53 | State Government; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 54 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 55 | Local Government; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 56 | Gas Station; Open, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 58 | Industrial; Closed, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 60 | Petroleum Distributor; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 61, 121, 305 | Oils-Fuel (Wholesale); petroleum distributor;closed, UST site, SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 62 | Commercial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 63 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 64, 276 | Automobile Dealers-New Cars, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 65, 309 | Gas Station; Open, UST site, SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 66 | State Government; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 70 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 72 | Industrial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 73 | UST site, Other; Closed | 6 YR | Database Search | VOC, SOC |
| 74, 268 | Electric Companies, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 75 | Commercial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 76 | UST site, Other; Closed | 6 YR | Database Search | VOC, SOC |
| 77 | UST site, Not Listed; Closed | 6 YR | Database Search | VOC, SOC |
| 78 | Utilities; Open, UST site | 6 YR | Database Search | VOC, SOC |
| 79, 138, 281 | Automobile Dealers-New Cars, UST site, rcra site | 6 YR | Database Search | IOC, VOC, SOC |
| 81, 130 | Truck/Transporter; Closed, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 83 | State Government; Open, UST site | 6 YR | Database Search | VOC, SOC |
| 84 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 85 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 86 | Commercial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 87 | Other; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 89, 304 | Gas Station; Open, UST site, SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 90 | Commercial; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 91 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 92 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 93, 127 | Automobile Dealers-Used Cars, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 94 | Other; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 95, 204, 287 | Automobile Dealers-New Cars, UST site, rcra site | 6 YR | Database Search | IOC, VOC, SOC |
| 97 | Local Government; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 98 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 99 | Other; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 100 | Other; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 101 | Auto Dealership; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 102 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 103, 162 | Automobile Repairing & Service; gas station, closed, UST site | 6 YR | Database Search | IOC, VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|---------------|--|--------------------------|--------------------------|-------------------------------------|
| 104 | Other; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 105 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 106 | Local Government; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 107 | Gas Station; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 108 | Gas Station; Open, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 109 | Gas Station; Open, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 110 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 112 | Gas Station; Open, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 114 | Gas Station; Open, UST site | 6 YR | Database Search | IOC, VOC, SOC |
| 115 | Not Listed; Closed, UST site | 6 YR | Database Search | VOC, SOC |
| 116, 310 | Gas Station; Open, UST site, SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 118 | General Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 119 | Livestock Breeders | 6 YR | Database Search | IOC, SOC |
| 120 | Hardware-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 122 | Fabricated Plate Work-Manufacturer | 6 YR | Database Search | IOC, VOC, SOC |
| 123 | Fertilizers (Wholesale) | 6 YR | Database Search | IOC, SOC |
| 124 | Concrete-Blocks & Shapes-Manufacture | 6 YR | Database Search | IOC, VOC, SOC |
| 125 | Farms | 6 YR | Database Search | IOC, SOC |
| 126 | State Government-National Security | 6 YR | Database Search | IOC, VOC, SOC |
| 128 | Tree Service | 6 YR | Database Search | IOC, SOC |
| 129 | Batteries-Storage-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 131 | Tire-Dealers-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 132 | Automobile Parts & Supplies-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 133 | Landscape Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 134 | Fertilizers (Wholesale) | 6 YR | Database Search | IOC, SOC |
| 135 | Veterinarians | 6 YR | Database Search | IOC, SOC |
| 136 | Veterinarians | 6 YR | Database Search | IOC, SOC |
| 137, 280, 306 | Corrugated & Solid Fiber Boxes, SARA site, cercla site | 6 YR | Database Search | IOC, VOC, SOC |
| 139, 307 | Oils-Fuel (Wholesale), SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 140 | General Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 141 | Roofing Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 142 | Contractors-Equipment & Supls-Repair | 6 YR | Database Search | IOC, VOC, SOC |
| 143 | Livestock Auction Markets | 6 YR | Database Search | IOC, SOC |
| 144 | Fire Departments | 6 YR | Database Search | IOC, VOC, SOC |
| 145 | Tank Removal | 6 YR | Database Search | IOC, VOC, SOC |
| 146 | Service Stations-Gasoline & Oil | 6 YR | Database Search | IOC, VOC, SOC |
| 147 | Painters | 6 YR | Database Search | IOC, VOC, SOC |
| 148 | Automobile Radiator-Repairing | 6 YR | Database Search | IOC, VOC, SOC |
| 149 | Commercial Printing NEC | 6 YR | Database Search | IOC, VOC, SOC |
| 150 | Lawn Mowers | 6 YR | Database Search | IOC, VOC, SOC |
| 151 | Water Treatment Equip Svc & Supls | 6 YR | Database Search | IOC, VOC, SOC |
| 152 | Veterinarians | 6 YR | Database Search | IOC, SOC |
| 153 | General Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 154 | Farm Supplies (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 155 | Farm Equipment (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 156 | Recreational Vehicles-Renting & leasing | 6 YR | Database Search | IOC, VOC, SOC |
| 157 | Automobile Restoration | 6 YR | Database Search | IOC, VOC, SOC |
| 158 | Automobile Parts & Supplies-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 159, 184 | Farm Equipment (Wholesale), RCRA site | 6 YR | Database Search | IOC, VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|----------|--------------------------------------|--------------------------|--------------------------|-------------------------------------|
| 160 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 161 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 163 | Electric Equipment & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 164 | Tire-Dealers-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 165 | Screen Printing | 6 YR | Database Search | IOC, SOC |
| 166 | Automobile Body-Repairing & Painting | 6 YR | Database Search | IOC, VOC, SOC |
| 167 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 168, 169 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 170 | Brake Service | 6 YR | Database Search | IOC, VOC, SOC |
| 171 | Cleaners | 6 YR | Database Search | IOC, SOC |
| 172 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 173 | Laboratories-Dental | 6 YR | Database Search | IOC, VOC, SOC |
| 174 | Wrecker Service | 6 YR | Database Search | IOC, VOC, SOC |
| 175 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 176 | Nursery | 6 YR | Database Search | IOC, VOC, SOC |
| 177 | Automobile Body Shop Equip/Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 178 | Veterinarians | 6 YR | Database Search | IOC, SOC |
| 179 | Aerial Applicators | 6 YR | Database Search | IOC, VOC, SOC |
| 180 | Automobile Body-Repairing & Painting | 6 YR | Database Search | IOC, VOC, SOC |
| 181 | Signs (Manufacturers) | 6 YR | Database Search | IOC, VOC, SOC |
| 182 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 183 | Tire-Dealers-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 184 | Mobile Homes-Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 185 | Welding Equipment & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 187 | Funeral Directors | 6 YR | Database Search | IOC, SOC |
| 188 | Signs (Manufacturers) | 6 YR | Database Search | IOC, VOC, SOC |
| 189 | Photographers-Portrait | 6 YR | Database Search | IOC, SOC |
| 190 | Carpet & Rug Cleaners | 6 YR | Database Search | IOC, VOC, SOC |
| 191 | Hydraulic Equipment-Repairing | 6 YR | Database Search | IOC, VOC, SOC |
| 192 | Water Treatment Equip Svc & Supls | 6 YR | Database Search | IOC, VOC, SOC |
| 193 | Home Improvements | 6 YR | Database Search | IOC, VOC, SOC |
| 194 | Belting & Belting Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 195 | Farms | 6 YR | Database Search | IOC, SOC |
| 196 | Hardware-Wholesale | 6 YR | Database Search | IOC, VOC, SOC |
| 197 | Motorcycles & Motor Scooters | 6 YR | Database Search | IOC, SOC VOC |
| 198 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 199 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 200 | Boat Equipment & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 201 | Photographers-Commercial | 6 YR | Database Search | IOC, SOC |
| 202 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 203 | Farms | 6 YR | Database Search | IOC, SOC |
| 205 | Automobile Parts & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 206 | Feed-Dealers (Wholesale) | 6 YR | Database Search | IOC, SOC |
| 207 | Automobile Body-Repairing & Painting | 6 YR | Database Search | IOC, VOC, SOC |
| 208 | Cleaners | 6 YR | Database Search | IOC, SOC |
| 209 | Ambulance Service | 6 YR | Database Search | IOC, VOC, SOC |
| 210 | Gasoline-Wholesale | 6 YR | Database Search | IOC, VOC, SOC |
| 211 | Automobile Parts & Supplies-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 212 | Electric Equipment & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 213 | Recycling Centers (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|----------|--------------------------------------|--------------------------|--------------------------|-------------------------------------|
| 214 | Truck-Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 215 | Pumps-Repairing | 6 YR | Database Search | IOC, VOC, SOC |
| 216 | Automobile Parts & Supplies-Mfr | 6 YR | Database Search | IOC, VOC, SOC |
| 217 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 218 | Storage-Household & Commercial | 6 YR | Database Search | IOC, SOCVOC |
| 219 | Electric Motors- Dlrs/Repairing | 6 YR | Database Search | IOC, VOC, SOC |
| 220 | Service Stations-Gasoline & Oil | 6 YR | Database Search | IOC, VOC, SOC |
| 221 | Car Washing & Polishing | 6 YR | Database Search | IOC, VOC, SOC |
| 222 | Car Washing & Polishing | 6 YR | Database Search | IOC, VOC, SOC |
| 223 | General Contractors | 6 YR | Database Search | IOC, VOC, SOC |
| 224 | Automobile Body-Repairing & Painting | 6 YR | Database Search | IOC, VOC, SOC |
| 225 | Seed Cleaning | 6 YR | Database Search | IOC, SOC |
| 226 | Welding Equipment & Supplies | 6 YR | Database Search | IOC, VOC, SOC |
| 227 | Trucking-Motor Freight | 6 YR | Database Search | IOC, VOC, SOC |
| 228 | Automobile & Truck Brokers | 6 YR | Database Search | IOC, VOC, SOC |
| 229 | Automobile Dealers-Used Cars | 6 YR | Database Search | IOC, VOC, SOC |
| 230 | Storage-Household & Commercial | 6 YR | Database Search | IOC, VOC, SOC |
| 231 | Funeral Directors | 6 YR | Database Search | IOC, VOC, SOC |
| 232 | Photo Finishing-Retail | 6 YR | Database Search | IOC, SOC |
| 233 | Automobile Parts & Supplies-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 234 | Farm Equipment (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 235 | Boat Dealers | 6 YR | Database Search | IOC, VOC, SOC |
| 236 | Motorcycles & Motor Scooters | 6 YR | Database Search | IOC, VOC, SOC |
| 237 | Paint-Retail | 6 YR | Database Search | IOC, SOCVOC |
| 238 | Photo Finishing-Retail | 6 YR | Database Search | IOC, SOC |
| 239 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 240 | Mufflers & ExhaUST Systems-Engine | 6 YR | Database Search | IOC, VOC, SOC |
| 241 | Wrecker Service | 6 YR | Database Search | IOC, VOC, SOC |
| 242 | Bicycles-Dealers | 6 YR | Database Search | IOC, VOC, SOC |
| 243 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 244 | Automobile Parts & Supplies-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 245 | Hay (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 246 | Storage-Household & Commercial | 6 YR | Database Search | IOC, VOC, SOC |
| 247, 288 | Cleaners, rcra site | 6 YR | Database Search | IOC, SOC |
| 248 | Grain-Dealers (Wholesale) | 6 YR | Database Search | IOC, SOC |
| 249 | Gasoline-Wholesale | 6 YR | Database Search | IOC, VOC, SOC |
| 250 | Hardware-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 251 | Newspapers (Publishers) | 6 YR | Database Search | IOC, SOC |
| 252 | Service Stations-Gasoline & Oil | 6 YR | Database Search | IOC, VOC, SOC |
| 253 | Dairies | 6 YR | Database Search | IOC, SOC |
| 254 | Parking Area Maintenance & Marking | 6 YR | Database Search | IOC, VOC, SOC |
| 255 | Car Washing & Polishing | 6 YR | Database Search | IOC, VOC, SOC |
| 256 | Turbochargers (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 257 | Farm Supplies (Wholesale) | 6 YR | Database Search | IOC, VOC, SOC |
| 258 | Photographers-Commercial | 6 YR | Database Search | IOC, SOC |
| 259 | Motorcycles & Motor Scooters-Dealer | 6 YR | Database Search | IOC, VOC, SOC |
| 260 | Newspapers (Publishers) | 6 YR | Database Search | IOC, SOC |
| 261 | Tire-Dealers-Retail | 6 YR | Database Search | IOC, VOC, SOC |
| 262 | Automobile Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 263 | Storage-Household & Commercial | 6 YR | Database Search | IOC, VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|----------|--|--------------------------|--------------------------|-------------------------------------|
| 264 | Irrigation Systems & Equipment-Mfr | 6 YR | Database Search | IOC, VOC, SOC |
| 265 | Truck-Repairing & Service | 6 YR | Database Search | IOC, VOC, SOC |
| 266 | Automobile Renting & Leasing | 6 YR | Database Search | IOC, VOC, SOC |
| 267 | Truck Renting & Leasing | 6 YR | Database Search | IOC, VOC, SOC |
| 269 | Government-Forestry Services | 6 YR | Database Search | IOC, VOC, SOC |
| 270 | Veterinarians | 6 YR | Database Search | IOC, SOC |
| 271 | Storage-Household & Commercial | 6 YR | Database Search | IOC, VOC, SOC |
| 272 | Commercial Printing NEC | 6 YR | Database Search | IOC, VOC, SOC |
| 273 | Delivery Service | 6 YR | Database Search | IOC, VOC, SOC |
| 274 | Engines-Gasoline | 6 YR | Database Search | IOC, VOC, SOC |
| 275 | Storage-Household & Commercial | 6 YR | Database Search | IOC, VOC, SOC |
| 277 | Municipal discharge, NPDES site | 6 YR | Database Search | IOC, SOC |
| 278 | USDA FS Sawtooth NF:Black Pine Mine Tailing: permit holder, CERCLA site | 6 YR | Database Search | IOC, VOC, SOC |
| 279 | CERCLA site | 6 YR | Database Search | IOC, VOC, SOC |
| 282 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 283 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 286 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 289 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 290 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 291 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 292 | RCRA site | 6 YR | Database Search | IOC, VOC, SOC |
| 293 | Clay ,Haznumber = 0, mine | 6 YR | Database Search | IOC, VOC, SOC |
| 294 | Gold ,Haznumber = 5, mine | 6 YR | Database Search | IOC, VOC, SOC |
| 295 | Clay ,Haznumber = 0, mine | 6 YR | Database Search | IOC, VOC, SOC |
| 296 | Sand & Gra ,Haznumber = 0, mine | 6 YR | Database Search | IOC, VOC, SOC |
| 297 | Sand & Gra ,Haznumber = 0 | 6 YR | Database Search | IOC, VOC, SOC |
| 298 | FARM SUPPLIES, SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 299 | FARM SUPPLIES, SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 300 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 301 | Pesticides & Agricultural Chem, SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 302 | SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 303 | SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 308 | Gasoline Service Stations, SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 311 | SARA site | 6 YR | Database Search | IOC, VOC, SOC |
| 312 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 313 | Farm Supplies, SARA | 6 YR | Database Search | IOC, SOCVOC |
| 314 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 315 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 316 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 317 | SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 318 | Telephone Com, Except Radio, SARA | 6 YR | Database Search | IOC, VOC, SOC |
| 319 | Fertilizers, Mixing Only, SARA | 6 YR | Database Search | IOC, SOC |
| 320, 328 | Site Cleanup Completed , Impact: Unknown, LUST site, UST | 10 YR | Database Search | VOC, SOC |
| 321 | Site Cleanup Completed , Impact: Unknown, LUST site | 10 YR | Database Search | VOC, SOC |
| 322, 335 | Site Cleanup Completed , Impact: Unknown, LUST site, UST site | 10 YR | Database Search | VOC, SOC |
| 323, 337 | Site Cleanup Completed , Impact: Unknown, LUST site, UST site | 10 YR | Database Search | VOC, SOC |
| 324 | Site Cleanup Completed , Impact: Unknown, LUST site | 10 YR | Database Search | VOC, SOC |

| Site # | Source Description ¹ | TOT ZONE ² | Source of Information | Potential Contaminants ³ |
|--------------------|--|-----------------------|-----------------------|-------------------------------------|
| 325 | Site Cleanup Incomplete , Impact: Unknown, LUST site | 10 YR | Database Search | VOC, SOC |
| 326 | Local Government; Closed, UST site | 10 YR | Database Search | VOC, SOC |
| 327 | Local Government; Open, UST site | 10 YR | Database Search | VOC, SOC |
| 329 | Federal Non-Military; Open, UST site | 10 YR | Database Search | VOC, SOC |
| 330 | Residential; Closed, UST site | 10 YR | Database Search | VOC, SOC |
| 331 | Gas Station; Open, UST site | 10 YR | Database Search | IOC, SOC, VOC |
| 332, 354, 355, 361 | Frozen Frts, Frt Juices & Veg, SARA site, UST site, tri site, NPDES site | 10 YR | Database Search | IOC, VOC, SOC |
| 333 | Industrial; Open, UST site | 10 YR | Database Search | VOC, SOC |
| 334 | Local Government; Closed, UST site | 10 YR | Database Search | VOC, SOC |
| 336 | Gas Station; Closed, UST site | 10 YR | Database Search | VOC, SOC |
| 338 | <=200 cows, Dairy | 10 YR | Database Search | IOC, SOC |
| 339 | <=200 cows, Dairy | 10 YR | Database Search | IOC, SOC |
| 340 | <=200 cows, Dairy | 10 YR | Database Search | IOC, SOC |
| 341 | <=200 cows, Dairy | 10 YR | Database Search | IOC, SOC |
| 342 | <=200 cows, Dairy | 10 YR | Database Search | IOC, SOC |
| 343 | Automobile Parts-Used & Rebuilt | 10 YR | Database Search | IOC, VOC, SOC |
| 344 | Florists-Wholesale | 10 YR | Database Search | IOC, SOC |
| 345 | General Contractors | 10 YR | Database Search | IOC, VOC, SOC |
| 346 | Automobile Body-Repairing & Painting | 10 YR | Database Search | IOC, VOC, SOC |
| 347 | Excavating Contractors | 10 YR | Database Search | IOC, VOC, SOC |
| 348 | Building Contractors | 10 YR | Database Search | IOC, VOC, SOC |
| 349 | Food Processors & Manufacturers | 10 YR | Database Search | IOC, VOC, SOC |
| 350 | General Contractors | 10 YR | Database Search | IOC, VOC, SOC |
| 351 | Truck-Repairing & Service | 10 YR | Database Search | IOC, VOC, SOC |
| 352 | Weed Control Service | 10 YR | Database Search | IOC, VOC, SOC |
| 353 | Municipal discharge, NPDES site | 10 YR | Database Search | IOC, SOC |
| 356 | rcris site | 10 YR | Database Search | IOC, VOC, SOC |
| 357 | rcris site | 10 YR | Database Search | IOC, VOC, SOC |
| 358 | Gold ,Haznumber = 5, mine | 10 YR | Database Search | IOC, VOC, SOC |
| 359 | Sand & Gra ,Haznumber = 0, mine | 10 YR | Database Search | IOC, VOC, SOC |
| 360 | Repair Shops & Related Service, SARA | 10 YR | Database Search | IOC, VOC, SOC |
| 362 | Petroleum Bulk Stations & Term, SARA | 10 YR | Database Search | IOC, VOC, SOC |
| 363 | SARA | 10 YR | Database Search | IOC, VOC, SOC |
| | Snake River | 0 - 10 YR | GIS Map | IOC, VOC, SOC, microbials |
| | Railroad | 0 - 10 YR | GIS Map | IOC, VOC, SOC, microbials |
| | Highway 27 | 6 YR | GIS Map | IOC, VOC, SOC |
| | Highway 30 | 0 - 10 YR | GIS Map | IOC, VOC, SOC, microbials |
| | Highway 81 | 10 YR | GIS Map | IOC, VOC, SOC |
| | Irrigation Systems & Equipment-Mfr | 0 - 10 YR | GIS Map | IOC, VOC, SOC, microbials |

¹ LUST = leaking underground storage tank, UST = underground storage tank, AST = above ground storage tank, SARA = Superfund Amendments and Reauthorization Act, NPDES = National Pollutant Discharge Elimination System, CERCLA = Comprehensive Environmental Response Compensation and Liability Act, RCRA = Resource Conservation Recovery Act, TRI = Toxic Release Inventory

² TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

³ IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Appendix B

Max Herbold Inc. Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

1. System Construction

SCORE

| | | |
|---|------------|------|
| Drill Date | 11/25/1968 | |
| Driller Log Available | YES | |
| Sanitary Survey (if yes, indicate date of last survey) | YES | 1993 |
| Well meets IDWR construction standards | NO | 1 |
| Wellhead and surface seal maintained | YES | 0 |
| Casing and annular seal extend to low permeability unit | NO | 2 |
| Highest production 100 feet below static water level | NO | 1 |
| Well located outside the 100 year flood plain | YES | 0 |

Total System Construction Score 4

2. Hydrologic Sensitivity

| | | |
|---|-----|---|
| Soils are poorly to moderately drained | YES | 0 |
| Vadose zone composed of gravel, fractured rock or unknown | YES | 1 |
| Depth to first water > 300 feet | NO | 1 |
| Aquitard present with > 50 feet cumulative thickness | NO | 2 |

Total Hydrologic Score 4

3. Potential Contaminant / Land Use - ZONE 1A

| IOC Score | VOC Score | SOC Score | Microbial Score |
|-----------|-----------|-----------|-----------------|
|-----------|-----------|-----------|-----------------|

| | | | | | |
|---|--------------------|----|----|-----|-----|
| Land Use Zone 1A | IRRIGATED CROPLAND | 2 | 2 | 2 | 2 |
| Farm chemical use high | YES | 2 | 0 | 2 | |
| IOC, VOC, SOC, or Microbial sources in Zone 1A | YES | NO | NO | YES | YES |
| Total Potential Contaminant Source/Land Use Score - Zone 1A | | 4 | 2 | 4 | 2 |

Potential Contaminant / Land Use - ZONE 1B

| | | | | | |
|--|-----|----|----|----|---|
| Contaminant sources present (Number of Sources) | YES | 22 | 19 | 21 | 6 |
| (Score = # Sources X 2) 8 Points Maximum | | 8 | 8 | 8 | 8 |
| Sources of Class II or III leacheable contaminants or 4 Points Maximum | YES | 3 | 3 | 3 | |
| Zone 1B contains or intercepts a Group 1 Area | YES | 2 | 0 | 2 | 0 |
| Land use Zone 1B 25 to 50% Irrigated Agricultural Land | | 2 | 2 | 2 | 2 |

Total Potential Contaminant Source / Land Use Score - Zone 1B 15 13 15 10

Potential Contaminant / Land Use - ZONE II

| | | | | | |
|--|-----|---|---|---|--|
| Contaminant Sources Present | YES | 2 | 2 | 2 | |
| Sources of Class II or III leacheable contaminants or | YES | 1 | 1 | 1 | |
| Land Use Zone II 25 to 50% Irrigated Agricultural Land | | 1 | 1 | 1 | |

Potential Contaminant Source / Land Use Score - Zone II 4 4 4 0

Potential Contaminant / Land Use - ZONE III

| | | | | | |
|--|-----|---|---|---|--|
| Contaminant Source Present | YES | 1 | 1 | 1 | |
| Sources of Class II or III leacheable contaminants or | YES | 1 | 1 | 1 | |
| Is there irrigated agricultural lands that occupy > 50% of | YES | 1 | 1 | 1 | |

Total Potential Contaminant Source / Land Use Score - Zone III 3 3 3 0

Cumulative Potential Contaminant / Land Use Score 26 22 26 12

4. Final Susceptibility Source Score

13 12 13 12

5. Final Well Ranking

High Moderate High High